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10/780,241

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David Vilkomerson

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EXAMINER

MEHTA, PARIKHA SOLANKI

ART UNIT

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3737

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/780,241	Applicant(s) VILKOMERSON, DAVID	
	Examiner Parikha S. Mehta	Art Unit 3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply.**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 April 2007.  
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) \_\_\_\_\_ is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☒ The drawing(s) filed on 17 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☐ All b) ☐ Some \* c) ☐ None of:  
 1. ☐ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to the previous rejection of claims 1-11 and 22-34 under 35 U.S.C. 102 and 35 U.S.C. 103 have been considered but are moot in view of the new ground(s) of rejection.
2. Applicant's amendment in response to the previous rejection of claims 1-11 under 35 U.S.C. 101 is insufficient to cure the statutory deficiencies of these claims. Accordingly, the rejection is maintained and reiterated herein, with additional guidance to assist Applicant in overcoming the rejection in subsequent amendments.
3. Applicant has failed to respond to the previous objection to the recitation of references in the specification without filing a proper Information Disclosure Statement. Accordingly, the objection is maintained and reiterated herein.

### ***Information Disclosure Statement***

4. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

### ***Drawings***

5. The drawings are objected to because they are informal. Examiner recommends that Applicant replace handwritten portions with formal, typed drawings in order to overcome this objection. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief

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description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 101***

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 1-11 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 1-11 are directed toward a method for measuring fluid velocity, the steps of which constitute a judicial exception (an abstract idea) but do not result in any kind of physical transformation, nor does the method provide a useful, tangible and concrete result. Specifically, the result of the method is neither tangible nor concrete. Merely "outputting an indication" could be interpreted to mean outputting any kind of transient signal, including abstract signals produced by a computer. Examiner respectfully suggests that Applicant amend claims 1 and 2 to perhaps include steps for creating a visually perceptible display of the corrected fluid velocity in order to cure the statutory deficiencies of the pending method claims. For further reference regarding the definition of statutory subject matter as set forth by the USPTO, Examiner directs Applicant's attention to the USPTO published Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility, published on 26 October 2005:

[http://www.uspto.gov/web/offices/pac/dapp/opla/preognotice/guidelines101\\_20051026.pdf](http://www.uspto.gov/web/offices/pac/dapp/opla/preognotice/guidelines101_20051026.pdf)

***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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9. Claims 22-34 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In claims 22-34, it appears that Applicant is attempting to invoke 35 U.S.C. 112, 6<sup>th</sup> paragraph, which reads as follows:

“An element in a claim for combination may be expressed as a means or step for performing a specified function without the recital of structure, material or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material or acts described in the specification and equivalents thereof.”

Applicant has failed to describe in the specification any structure or material which would constitute the means recited in claims 22-34. For the purposes of further examination within this Office Action, Examiner interprets these claims to recite any structure that is reasonably capable of performing the function following the phrase “means for”.

Applicant is respectfully reminded that any future amendments made to the instant specification and/or claims in an attempt to overcome this rejection may not contain new subject matter.

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 1-11, 22-24, 28, 29 and 32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

**Regarding claim 1**, the claim recites “a method for measuring fluid velocity using Doppler flow measurements,” yet it fails to recite any steps for measuring such velocity. In view of the supporting disclosure, it appears that Applicant is attempting to obtain a patent for the invention of correcting a measurement, and not the actual method of measuring itself. Accordingly, in view of the discrepancies between the preamble and recitation of the claim, it is rendered unclear and indefinite. Examiner suggests that Applicant amend the preamble of the claim to instead recite “a method for correcting ultrasound Doppler flow measurements of fluid velocity”. If Applicant regards the steps of measuring the velocity to also be a novel feature of the invention, the Examiner suggests claim 1 be amended to explicitly recite steps for measuring the velocity.

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Furthermore, claim 1 is considered unclear and indefinite for generally reciting "angle constancy". In view of the fact that, in the field of Doppler flow measurement, the term "angle" could reasonably be interpreted to mean, for example, a phase or impedance angle, or the angle between a transducer and a surface, or one of a variety of other angles, one of ordinary skill in the art would not be reasonably apprised of exactly what type angle is claimed by the instant invention.

Additionally, the preamble of claim 1 recites Doppler flow, whereas the claim limitations recite Doppler frequency. Flow and frequency are not considered interchangeable terms in the state of the art of ultrasound flow measurement. Examiner suggests that Applicant amend the claim to consistently recite either flow or frequency in both the preamble and limitations.

Finally, the preamble of claim 1 recites "an ultrasound device," yet the subsequent steps recited in the same claim fail to recite ultrasound at all. Therefore, the limitations of the claim could be reasonably interpreted to apply to non-ultrasound Doppler devices, such as optical Doppler devices. As with the method of measurement discrepancy discussed previously, the limitations and preamble are inconsistent and therefore the entire claim is rendered indefinite. Examiner suggests that Applicant amend claim 1 to explicitly recite steps for using an ultrasound device in order to correct the inconsistencies of its current recitation.

**Regarding claim 2**, this claim is rejected for reciting the term "Doppler velocity spectra" without sufficient antecedent basis. Claims 3-11 are also rejected in view of their dependence from claim 2.

**Regarding claims 5, 6, 9, 28, 29 and 32**, these claims are rejected for reciting "the peak Doppler frequency errors" without sufficient antecedent basis.

**Regarding claims 22 and 23**, the recitation of an "ultrasound sound system" is not a term commonly known in the art, nor is it reasonably defined in the supporting disclosure such that one of ordinary skill of the art would be reasonably apprised of the scope of Applicant's claimed invention. Furthermore, it is unclear how the "velocity vector" of claim 22, relates to or is derived from the measured Doppler velocity signal. Claim 24 is accordingly rejected in view of its dependence from claim 24.

#### ***Claim Rejections - 35 USC § 102***

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

13. Claims 1-11 and 22-34 are rejected under 35 U.S.C. 102(e) as being anticipated by Criton et al (US Patent No. 6,464,637), hereinafter Criton ('637).

**Regarding claims 1-6, 8, 9, 22-29, 31 and 32,** Criton ('637) discloses a method and system for correcting Doppler fluid velocity measurements for angular inconsistencies (Abstract), including means and steps for obtaining information about angle constancy (col. 1 lines 61-64), calculating angular positions of a velocity vector from at least two peak Doppler frequencies obtained from an ultrasound crossbeam (col. 1 line 64 – col. 2 line 6, col. 2 lines 50-53, Figs. 2 & 3), determining peak Doppler frequency errors by minimizing a difference between a calculated angular position and a determined true angular position (col. 3 lines 9-35), determining true peak Doppler frequencies (col. 4 lines 10-14), and determining a corrected velocity vector (col. 2 lines 3-6, col. 3 lines 6-58). Criton ('637) additionally discloses means and steps for determining the true angular position by averaging a sum of the calculated angular positions (col. 3 lines 8-11).

**Regarding claims 7 and 30,** The Doppler power spectra obtaining step must inherently be performed over a given time period, as it would be impossible for one of reasonable skill in the art to obtain such a spectrum in a single instant.

**Regarding claims 10, 11, 33 and 34,** Criton ('637) discloses the method and system for ultrasound assessment of blood, which also constitutes ultrasound scattering fluid as recited in the instant application.

### ***Conclusion***

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action

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is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Parikha S. Mehta whose telephone number is 571.272.3248. The examiner can normally be reached on M-F, 8 - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571.272.4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Parikha S. Mehta

Examiner – Art Unit 3737



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